

use of aspirin for treatment of rhinosinusitis and asthma is currently undergoing further evaluation.

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Exercise-Induced Anaphylaxis

ANAPHYLAXIS IS AN ACUTE, potentially fatal, multisystem reaction characterized by urticaria, angioedema, bronchospasm, hypotension and abdominal cramps. In most cases the reaction is caused by IgE antibody-mediated release of histamine and SRS-A (slow-reacting substance of anaphylaxis), which increase vascular permeability and cause contraction of smooth muscle in the target organs. The allergen is most often a food, drug or insect venom. Non-IgE antibody-mediated activation of vasoactive peptides, kinins or complement-derived anaphylatoxins C5a or C3a might play a role in some instances of anaphylaxis. *Anaphylactoid* reactions refer to nonimmunologic release or activation of mediators such as occurs in the systemic reactions to aspirin or iodinated radiographic contrast media.

The allergen causing anaphylaxis is usually readily apparent from the rapid onset of symptoms following exposure. If the cause is not obvious from the initial evaluation, careful follow-up with appropriate tests will reveal the responsible allergen in most cases. Nevertheless, some patients have recurrent episodes of anaphylaxis that are idiopathic.

Anaphylaxis in athletes, induced by physical exercise, was recently described. The symptoms and signs of the reaction are identical to those in allergen-induced anaphylaxis and are severe enough in some cases to be considered life-threatening. Most of these persons are in their late teens or early 20's, and in some cases frequent attacks had occurred over a number of years. A personal or family history of atopic disease is common but not universal in this group of patients.

The mechanism of exercise-induced anaphylaxis and its relationship to cholinergic urticaria are unknown. The latter condition is characterized by the appearance of small cutaneous wheals with

itching following exercise, overheating or emotional stress. Two patients with exercise-induced anaphylaxis had skin lesions typical of cholinergic urticaria, hypotension, angioedema and elevation of plasma histamine levels during an attack. In patients with exercise-induced anaphylaxis, however, symptoms are not precipitated by heat or stress.

Exercise-induced anaphylaxis does not appear to be related to exercise-induced asthma, a characteristic feature in nearly all asthmatic patients. Most patients with exercise-induced anaphylaxis have no history of asthma.

Treatment with epinephrine, antihistamines and fluid replacement appears to be as effective in this condition as in the allergic form of anaphylaxis. Pharmacologic preventive measures have not yet been evaluated. Regular, repeated exercise by one patient resulted in progressive diminution of symptoms and in vivo histamine release, although similar attempts at exercise "desensitization" in other patients have been unsuccessful. Until the cause of exercise-induced anaphylaxis is clarified, patients should modify their exercise program to minimize the recurrence of these reactions.

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Standardization of Allergens

STANDARDIZED EXTRACTS of allergens should have lot-to-lot consistency and contain the allergens responsible for eliciting an allergic response. In general, such extracts will have a labeled potency and will be equivalent to a reference preparation. The expiration date for standardized extracts is established by stability studies and varies with the concentration.

The need for standardization has been amply shown by published studies describing as much as a thousandfold variation in skin test reactivity among commercial extracts. Extracts of low potency are not necessarily low in allergen content but may be lacking one or more important allergens or may contain badly degraded allergens. Consequently, using nonstandardized extracts can